Race by Sex Differences in Depression Symptoms and Psychosocial Service Use Among Non-Hispanic Black and White Patients With Lung Cancer

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Published online ahead of print at www.jco.org on December 9, 2013.

Supported by National Cancer Institute grants to CanCORS Consortium Statistical Coordinating Center (Grant No. U01 CA093344) and Primary Data Collection and Research Centers (Grants No. U01-CA093332, U01-CA093324, U01-CA093348, U01-CA093329, U01-CA093339, U01-CA093326, CRS-02-164), and to E.R.P. and S.C. (Grant No. 1U54-CA156732-01). Additional support provided by an American Cancer Society grant to L.T. (Grant No. PF PCSM 120414).

Authors' disclosures of potential conflicts of interest and author contributions are found at the end of this article.

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0732-183X/14/3202w-107w/\$20.00

DOI: 10.1200/JCO.2012.46.6466

ABSTRACT

Purpose

This study examined race by sex differences in depression symptoms and psychosocial service use (pastors, social workers, mental health workers, support groups) among patients with lung cancer.

Patients and Methods

The multiregional Cancer Care Outcomes Research and Surveillance study surveyed black and white adults with stages I to III lung cancer ($n = 1,043$) about depression symptoms, interest in help for mood, and psychosocial service use. Multivariable logistic regression was used to evaluate race/sex differences in depression symptoms (modified Center for Epidemiologic Studies Depression Scale ≥ 6) and psychosocial service use, independent of demographic, clinical, psychosocial, and behavioral covariates.

Results

A total of 18.2% screened positive for depression symptoms. This proportion was highest among black men (24.7%), followed by white women (20.6%), black women (15.8%), and white men (15.0%). In adjusted analyses, white women showed greater risk for depression symptoms relative to black women ($P = .01$) and white men ($P = .002$), with no other differences among groups. Black patients were less likely than white patients to receive desired help for mood from their doctors ($P = .02$), regardless of sex. Among all patients, black women were most likely to have contact with pastoral care and social work.

Conclusion

Race and sex interacted to predict risk of depression symptoms. Covariates accounted for elevated risk among black men. White women showed greater risk than black women and white men, independent of covariates. Black patients may experience greater barriers to receiving help for mood from their doctors. Race by sex differences in contact with psychosocial services highlight potential differences in the extent to which services are available, acceptable, and/or sought by patients.

J Clin Oncol 32:107-113. © 2013 by American Society of Clinical Oncology

INTRODUCTION

Lung cancer incidence and mortality rates vary by race and sex.¹ Between 2003 and 2009, overall 5-year relative survival among patients was 12.0% for black men, 14.5% for white men, 15.4% for black women, and 19.5% for white women.¹ Black patients also face lower rates of optimal lung cancer treatment relative to white patients.^{2,3} Despite disparities in disease burden, race by sex differences in depression symptoms and use of psychosocial services after diagnosis have received little attention.

Few studies have collected sufficient data to support analysis of race by sex differences in depression among patients. Depression affects 10% to 25%

of patients with cancer⁴ and is more prevalent in lung cancer relative to other common cancers (eg, breast and prostate).⁵ Among patients with lung cancer, those with greater disease burden are at even higher risk for depression.⁶ Unlike studies in the general U.S. population,⁷ studies in lung cancer have not consistently shown a sex-related difference in depression.^{8,9} Black men with lung cancer, who have greater risk for poor cancer outcomes, conceivably may be at elevated risk for depression.

Undertreatment of depression is a significant concern. Several factors complicate depression identification, including patient/provider interpretation of symptoms as normative reactions to cancer, or misattribution of symptoms to physical

causes.¹⁰ In lung cancer, depressed mood may be less likely to prompt early supportive care referrals for black patients than for white patients.¹¹ These gaps compound mental health care disparities in the general population.¹² We do not know whether racial differences in receipt of help for depression among patients with lung cancer vary by patient sex.

Psychosocial interventions have been shown to improve quality of life among patients with cancer. Yet evidence suggests that interventions being studied are not consistently available or sought by patients in community settings.¹³ Black patients with cancer may be more inclined to seek emotional support from family or religion, as a result of lack of mental health care referrals, emphasis on self-sufficiency and faith, and stigma of seeking professional help.¹⁴ Black women have reported more religious involvement relative to black men.^{15,16} Information about race by sex patterns of psychosocial service use could inform efforts to increase access to acceptable care for patients at risk for depression.

The current study examined race by sex differences in depression symptoms, in a large cohort of non-Hispanic black and white adults at five months after diagnosis of stage I to III lung cancer. We also explored differences in patients' interest in, and receipt of, help for mood, and in contact with psychosocial services. Models adjusted for demographic, clinical, psychosocial, and behavioral factors that may account for such differences.

PATIENTS AND METHOD

Study Design and Data Collection

Data were drawn from a multiregional study conducted by the Cancer Care Outcomes and Research Surveillance (CanCORS) Consortium to examine disparities in cancer treatments and outcomes.¹⁷ The CanCORS cohort included more than 5,000 adults diagnosed with lung cancer from 2003 to 2005 in one of four areas (Alabama, Iowa, Los Angeles County, or Northern California), five health maintenance organizations, or 15 Veterans' Affairs Health Care Systems. Human subjects committees at participating institutions approved the study.

CanCORS study methods have been described previously.¹⁸ Patients of age ≥ 21 years were surveyed at approximately 5 months after cancer diagnosis. Surrogates completed surveys for patients who were deceased or too ill. Interviewers collected survey data using computer-assisted telephone interviews. Survey response and cooperation rates, based on American Association for Public Opinion Research standard definitions,¹⁹ were 49% and 59%, respectively. Additional cancer diagnostic information was obtained from medical records (available for 87% of patients) and registry data.

Cohort Selection

Of 5,015 patients with lung cancer, 1,043 were eligible, including those who completed a full survey at 5 months after diagnosis, self-identified as non-Hispanic black or white, and were diagnosed with stages I to III lung cancer (Fig 1). Surveys were excluded if they were completed by surrogates (which had no depression data), patients with stage IV or unknown stage lung cancer (owing to potential for disease processes to uniquely interact with depression symptoms and service use), and patients who did not respond to depression or race items. Iowa site cases were excluded because there were few black patients ($< 1.0\%$) in that group.

Measures

Depression symptoms. A brief version²⁰ of the Center for Epidemiologic Studies Depression Scale (CES-D),²¹ including eight yes/no items, was administered to screen for depression symptoms within the past 4 weeks. The measure showed good internal consistency and factor structure in community-dwelling older adults²⁰ and ethnically diverse adults from late

Fig 1. Cancer Care Outcomes Research and Surveillance cohort selection.

middle to older age.²² Based on cutoff scores from the original CES-D,²¹ a cutoff of six symptoms on the brief version is considered a positive screen.²⁰

Patient interest in and receipt of help for depression symptoms. Patients who endorsed at least one depression symptom were asked, "During the last 4 weeks, did you want help for your mood?" Patients who wanted help were asked, "During the last 4 weeks did you get the help you wanted from your doctor for your mood?" Per CanCORS survey protocol, these items were not asked of patients who did not endorse any depression symptoms.

Psychosocial service use. All patients were asked whether they had seen a social worker, pastoral counselor, other specialty provider (psychiatrist, psychologist, mental health worker), or joined a support group, since their cancer diagnosis, and responded yes/no for each.

Primary predictors. Race and sex data were collected by patient self-report.

Covariates. We included additional factors that may account for race by sex differences in our primary outcomes. Demographic factors included age, marital status, education, and household income. Clinical factors included lung cancer stage obtained from medical records and registries and patient reports of cancer treatment (surgery, radiation, chemotherapy). Treatment data showed acceptable agreement with available medical record data (κ values: surgery = .86; chemotherapy = .90; radiation = .91), with sensitivity more than 96% and specificity more than 84% across treatment categories. Lung cancer symptoms (dyspnea, coughing) were assessed using four items

from the European Organization for Treatment Research of Cancer Quality of Life Questionnaire lung cancer module,²³ with higher mean scaled scores (1 to 100) indicating more symptoms. Patients reported history of lung disease, cardiovascular disease and diabetes, and current health status (excellent, very good, good, fair, poor). An analog scale from the Brief Pain Inventory²⁴ was used to assess worst pain during the past 4 weeks (0 = no pain, to 10 = worst pain you can imagine). In terms of psychosocial and behavioral factors, cancer care experiences were evaluated using the Hospital Consumer Assessment of Healthcare Providers and Systems²⁵—patient-doctor communication (5 items) and nursing care quality (2 items), with higher mean scaled scores (0 to 100) indicating better experiences. Perceived support was assessed using mean scores of five items from the Medical Outcomes Study Social Support Survey,²⁶ with higher scores indicating greater support. Fatalistic beliefs about life and health were assessed with four items based on the Powe Fatalism Inventory,²⁷ with higher scores reflecting greater fatalism. Current smoking was assessed (yes/no).

Statistical Method

Sample characteristics were reported by race and sex, using independent samples *t* tests and χ^2 tests to evaluate differences between groups. Item nonresponse ranged from 0 to 2.1% for all variables except household income (8.0%) and lung cancer symptoms (9.0%). Multiple imputation was used to impute missing data, per CanCORS protocol.²⁸

Primary analyses. Adjusted logistic regression models were evaluated to test whether the interaction of race by sex was associated with (1) positive depression screen (modified CES-D ≥ 6), (2) interest in and receipt of help for mood from one's doctor, and (3) contact with psychosocial services. Models were adjusted for data collection site as well as the demographic, clinical, psychosocial, and behavioral covariates. Categorical predictors were dummy-coded and entered into each model in blocks. Race and sex were entered as a single four-level variable. This method allowed us to compare all four groups simultaneously while maximizing sample size and inclusion of covariates. Models were tested for statistical significance at a two-sided $P < .05$. In the case of a significant coefficient for the race*sex variable, we evaluated between-group differences in the outcome of interest. In the case of a nonsignificant coefficient for the race*sex variable, we evaluated main associations of race and sex with the outcome of interest.

RESULTS

Participants

Comparisons by race and sex (Table 1) indicated that black patients were more likely to be younger and have low income and lower educational attainment relative to white patients, whereas black female patients were most likely to be living without a spouse or partner relative to all other groups. Black patients also were more likely to have stage III (v stage I/II) disease, less likely to have undergone surgery, and more likely to have received radiation or chemotherapy, with some exceptions by patient sex. Black and white male patients reported worse lung cancer symptoms relative to white female patients. Among white patients, men perceived better nursing care quality than women, with no sex differences among black patients. Black patients reported greater fatalism than white patients, with some exceptions by patient sex.

Differences in Risk for Depression Symptoms

Among all participants, 18.2% screened positive for depression symptoms. This proportion was highest among black men (24.7%), followed by white women (20.6%), black women (15.8%), and white men (15.0%). In adjusted analyses, race and sex interacted to predict risk of depression symptoms (Table 2). White women remained at higher risk than both black women ($P = .01$) and white men ($P = .002$),

with no other differences among the groups. Additionally, older age, more lung cancer symptoms, worse bodily pain, poorer general health, and poorer support were associated with greater risk for depression symptoms ($P \leq .02$).

Interest in and Receipt of Help for Mood

Differences in likelihood of interest in help for mood. Among patients who endorsed at least one depression symptom ($n = 838$), 28.0% wanted help for mood. This proportion was highest among black women (40.4%), followed by black men (32.3%), white women (30.8%), and white men (22.2%). In adjusted analyses, race and sex interacted to predict likelihood of interest in help for mood. Black women (odds ratio [OR] = 2.56; 95% CI, 1.32 to 4.95; $P = .005$) and white women (OR = 1.98; 95% CI, 1.29 to 3.03; $P = .002$) were more likely to have wanted help relative only to white men, with no other differences among the groups.

Differences in likelihood of receipt of help. Among participants who wanted help for mood, 77.8% received the help they wanted from their doctor. This proportion was higher among white men (81.9%) and white women (79.4%) than black women (69.6%) and black men (63.2%). In adjusted analyses, race and sex did not interact to predict likelihood of receiving the desired help; however, main associations indicated that white patients were more likely than black patients to receive the desired help (OR = 3.29; 95% CI, 1.20 to 9.02, $P = .02$).

Psychosocial Service Use

Prevalence. Among all patients, regardless of whether they had depression symptoms, 40.3% reported that they had spoken with at least one of the following since lung cancer diagnosis: pastoral counselor (26.3%), social worker (16.4%), other specialty provider (7.6%), and/or support group (4.4%). Proportions by race and sex are shown in Figure 2.

Differences in likelihood of pastoral contact. The proportion of patients who had contact with a pastoral counselor was higher among black women (45.3%) relative to black men (27.6%), white women (25.0%), and white men (24.3%). In adjusted analysis, race and sex interacted to predict likelihood of contact with a pastoral counselor. Odds of contact were higher for black women relative to black men (OR = 2.58; 95% CI, 1.27 to 5.23; $P = .008$), white women (OR = 1.92; 95% CI, 1.09 to 3.35; $P = .02$), and white men (OR = 2.69; 95% CI, 1.51 to 4.79; $P < .001$), with no other differences among the groups. Additionally, being widowed (v married/living with partner) was associated with less likelihood of pastoral contact (OR = .52; 95% CI, .32 to .85; $P = .009$), whereas having stronger fatalistic beliefs was associated with greater likelihood of pastoral contact (OR = 1.76; 95% CI, 1.37 to 2.28; $P < .001$).

Differences in likelihood of social work contact. The proportion of patients who had contact with a social worker was higher among black women (28.4%), followed by black men (24.1%), white men (16.0%), and white women (13.4%). In adjusted analysis, race and sex interacted to predict likelihood of social work contact. Specifically, odds were higher for black women relative to white women (OR = 1.99; 95% CI, 1.04 to 3.81; $P = .04$) and white men (OR = 2.12; 95% CI, 1.10 to 4.09; $P = .03$), with no other differences among the groups. Among covariates, stage III (v stage I/II) lung cancer (OR = 1.70; 95% CI, 1.08 to 2.67; $P = .02$) and history of lung disease (OR = 1.57; 95% CI, 1.08 to 2.30; $P = .02$) were associated with greater likelihood of social work contact.

Table 1. Characteristics of Newly Diagnosed Patients With Lung Cancer by Race and Sex

Variable	%				P		
	Black Man (n = 89)	Black Woman (n = 76)	White Man (n = 446)	White Woman (n = 432)	By Race	By Sex	Across All 4 Groups
Demographic							
Age < 65 years	55.1 ^{c,d}	56.6 ^{c,d}	36.3 ^{a,b}	36.1 ^{a,b}	<.001	1.00	<.001
Marital status					<.001	<.001	<.001
Married/living with partner	57.3 ^{b,c}	36.0 ^{a,c,d}	69.5 ^{a,b,d}	48.6 ^{b,c}			
Divorced/separated/never married	38.2 ^{c,d}	45.3 ^{c,d}	22.9 ^{a,b}	21.3 ^{a,b}			
Widowed	4.5 ^{b,d}	18.7 ^{a,c}	7.6 ^{b,d}	30.1 ^{a,c}			
Education					<.001	0.19	<.001
< High school diploma	25.0 ^d	32.4 ^d	16.6 ^{b,d}	11.6 ^{a,b,c}			
High school diploma	40.9 ^{c,d}	28.4	29.0 ^a	29.4 ^a			
Some college or higher	34.1 ^{c,d}	39.2 ^{c,d}	54.4 ^{a,b}	59.0 ^{a,b}			
Household income (USD)					<.001	0.93	<.001
0-19,999	52.6 ^{c,d}	58.0 ^{c,d}	28.8 ^{a,b}	27.1 ^{a,b}			
20,000-39,999	26.3 ^b	11.6 ^{a,c,d}	28.8 ^b	32.6 ^b			
40,000+	21.1 ^{c,d}	30.4	42.3 ^a	40.4 ^a			
Clinical							
Cancer stage III (v I/II)	48.3	44.7	38.6	37.3	.04	.57	.19
Cancer treatments received							
Surgery	58.4	53.9 ^{c,d}	68.2 ^b	67.8 ^b	.004	.79	.03
Radiation	42.7 ^d	50.0 ^{c,d}	35.0 ^b	29.0 ^a	<.001	.17	.001
Chemotherapy	60.7 ^{c,d}	57.3 ^d	47.5 ^a	42.1 ^{a,b}	.001	.09	.03
Comorbid conditions							
Lung disease	25.6 ^{c,d}	35.1	25.3 ^a	21.3 ^a	.06	.60	.15
Cardiovascular disease	29.1 ^d	25.3	34.1 ^d	19.1 ^{a,c}	.88	.001	<.001
Diabetes	19.5	21.3	16.4	12.8	.06	.20	.12
General perceived health ^e					.54	.19	.57
Mean	3.0	3.1	3.1	3.1			
SD	1.1	0.9	1.1	1.1			
Worst recent bodily pain ^f					.64	.14	.38
Mean	3.1	3.8	3.1	3.4			
SD	3.5	3.7	3.4	3.4			
Lung cancer symptoms ^g					.01	.001	<.001
Mean	38.2 ^d	36.6	35.1 ^d	29.8 ^{a,c}			
SD	23.1	23.1	21.9	21.4			
Psychosocial and behavioral							
Cancer care experiences							
Patient-doctor communication ^h					.96	.21	.34
Mean	87.5	92.0	89.1	89.8			
SD	20.1	15.1	16.4	16.8			
Nursing care quality ^h					.52	.02	.01
Mean	90.1	93.4	92.4 ^d	88.7 ^c			
SD	20.7	18.5	15.7	20.2			
Emotional/information support ⁱ					.39	.96	.85
Mean	4.3	4.3	4.4	4.4			
SD	1.0	0.9	0.8	0.8			
Fatalistic beliefs ^j					<.001	.29	<.001
Mean	2.8 ^c	2.8 ^{c,d}	2.6 ^{a,b}	2.6 ^b			
SD	0.6	0.6	0.6	0.7			
Current smoker	14.9	9.2	12.4	10.6	.79	.25	.57

Abbreviation: SD, standard deviation.

^aDifference in comparison to black men at $P < .05$.^bDifference in comparison to black women at $P < .05$.^cDifference in comparison to white men at $P < .05$.^dDifference in comparison to white women at $P < .05$.^eRange 1-5 (poor to excellent).^fBrief Pain Inventory, range 0-10 (no pain to worst pain you can imagine).^gEuropean Organization for Treatment and Research of Cancer Quality of Life Questionnaire, range 0-100 (no symptoms to all symptoms experienced quite a bit).^hHospital Consumer Assessment of Healthcare Providers and Systems, range 0-100 (worst care to best care).ⁱMedical Outcomes Study Social Support Survey, range 1-5 (none of the time to all of the time).^jRevised Powe Fatalism Inventory, range 1-4 (strongly disagree to strongly agree).

Table 2. Adjusted Logistic Regression Model Predicting Likelihood of Positive Depression Screens in Patients With Newly Diagnosed Lung Cancer (n = 1,043)

Variables	OR	95% CI	P
Race and sex			
Race*sex combined variable*			
White man	—	—	—
Black woman	0.77	0.34 to 1.73	.53
White woman	2.11	1.32 to 3.38	.002
Black man	1.55	0.79 to 3.07	.20
Demographic			
Age < 65 years	1.73	1.12 to 2.66	.01
Marital status			
Married/living with partner	—	—	—
Divorced/separated/never married	1.14	0.72 to 1.82	.58
Widowed	0.82	0.45 to 1.50	.52
Education			
< High school diploma	—	—	—
High school diploma	0.70	0.40 to 1.23	.22
Some college or higher	0.63	0.36 to 1.11	.11
Household income (USD)			
0-19,999	—	—	—
20,000-39,999	0.86	0.52 to 1.42	.55
40,000+	0.82	0.47 to 1.43	.48
Clinical			
Cancer stage III (v I/II)	1.13	0.68 to 1.86	.64
Cancer treatments received			
Surgery	1.50	0.90 to 2.51	.12
Radiation	1.38	0.83 to 2.27	.21
Chemotherapy	1.24	0.78 to 1.98	.37
Comorbid conditions			
Lung disease	1.23	0.83 to 1.81	.31
Cardiovascular disease	1.51	0.98 to 2.33	.06
Diabetes	1.07	0.63 to 1.77	.80
General perceived health	0.66	0.54 to .82	<.001
Worst recent bodily pain	1.10	1.04 to 1.16	.001
Lung cancer symptoms	1.02	1.01 to 1.03	<.001
Psychosocial and behavioral			
Cancer care experiences			
Patient-doctor communication	0.99	0.98 to 1.00	.02
Nursing care quality	0.99	0.74 to 1.40	.07
Emotional/information support	0.58	0.47 to .72	<.001
Fatalistic beliefs	1.01	0.73 to 1.51	.93
Current smoker	0.92	0.53 to 1.59	.76

Abbreviation: OR, odds ratio.

*Depression symptom risk was also greater for white women relative to black women (OR = 2.74; 95% CI, 1.23 to 6.09; $P = .01$). There were no differences between black men and black women (OR = 2.01; 95% CI, .78 to 5.19; $P = 0.15$) or between black men and white women (OR = .74; 95% CI, .36 to 1.50; $P = 0.40$).

Differences in likelihood of contact with specialty providers or support groups. Adjusted analyses were not conducted because of low use frequencies. However, in unadjusted analyses, there were no differences by race and sex in contact with other specialty mental health care providers or support groups.

Role of depression symptoms in likelihood of contact with services. Among patients who did not endorse any depression symptoms (n = 204), 32.8% reported that they had spoken with at least one of the following since lung cancer diagnosis: pastoral counselor (22.5%), social worker (13.2%), other specialty provider (4.4%), and/or support group (2.5%). Adjusted analyses among all patients indicated

Fig 2. Contact with psychosocial services among patients with lung cancer, from diagnosis to approximately 5 months after diagnosis (n = 1,043).

that those with more depression symptoms had greater likelihood of contact with a specialty provider (OR = 1.28; 95% CI, 1.13 to 1.45; $P < .001$). This association did not differ by race or sex.

DISCUSSION

This study used data from a multiregional cohort of non-Hispanic black and white adults with newly diagnosed lung cancer, to evaluate race by sex differences in prevalence of depression symptoms, interest in/receipt of help for mood, and contact with specific psychosocial services. Prevalence of depression symptoms was highest among black men, followed by white women, black women, and white men. However, in adjusted analyses, white women showed the greatest risk for depression symptoms, with no other differences in risk among the groups. Disparities in demographic factors and treatment history should be examined in future work as potential mechanisms for risk among black men. In comparison, unexplained vulnerability among white women is consistent with the sex-related difference in depression in the general population.²⁹ This vulnerability may reflect race or sex differences in factors such as endorsement of depression symptoms, responses to disease-related stressors, and/or history of adversity.³⁰ Differences also might be accounted for by coping patterns, such as religious involvement and the mental health benefits that patients derive from involvement.³¹

Among patients who endorsed any depression symptoms, both black and white women were more likely than white men to want help for mood. However, among those who wanted help, black patients were less likely than white patients to get the help they wanted from their doctor, independent of patient sex and other factors. Prior work has shown a lag in referring black oncology patients with depressed mood to supportive care.¹¹ The current data also corroborate evidence of racial inequities in receipt of depression treatment in the U.S. population, independent of socioeconomic and clinical indicators of medically underserved groups.³² Providers should be alerted to risk for depression symptoms among patients, including subgroups such as black men, who are not typically identified as high risk for depression in the general population.⁷ Moreover, barriers to depression

management such as patient–provider miscommunication and medical mistrust³³ suggest that providers should explore patients' perceptions of appropriate care before making treatment recommendations.

Patterns of psychosocial service use highlight race by sex differences in the extent to which specific services may be available, acceptable, needed, and/or sought by patients. Among all patients, social work and pastoral care comprised the most common services, although we do not know content or reasons for contact. Furthermore, black women were two times more likely than white women and men to have met with a social worker and at least two times more likely than all other groups to have met with pastoral care. There were no race by sex differences in contact with other specialty providers or support groups.

Although details of contact were not known, prevalence highlights the potential for pastoral care to be an accessible and acceptable source of support. Prior work indicates that black adults have greater religious involvement relative to white adults, and black women are more engaged in organized religion relative to black men.^{15,16} However, few psychosocial intervention trials for patients with cancer have incorporated religious or spiritual content.¹³ Conversely, there is little recognition or training for faith-based organizations to address supportive care needs of patients with cancer.³⁴ Further work is needed to establish benefits of faith-based interventions. Assessing the role of faith may help in identifying depression treatment options that are clinically appropriate but also acceptable and consistent with patients' beliefs. These discussions may lead to more patients receiving treatment for their depression.

This study has limitations. The use of a brief depression screen may have led to misclassification of depression status for some patients. Detailed history of depression was unavailable; patients with chronic versus new depression secondary to lung cancer may differ with regard to risk factors and psychosocial service use. The item about receipt of help from one's doctor precluded identification of whether patients wanted and received help from other sources. Similarly, lim-

itations in psychosocial service items precluded identification of reasons for initial contact (mood or other issues) or the volume and content of visits, as well as use of services before cancer diagnosis. Finally, our statistical models and sample sizes of certain subgroups limited our ability to detect explanatory factors for race by sex differences.

This study is among the first to examine race by sex patterns of depression symptom prevalence and contact with psychosocial services in a large cohort across a range of health systems, controlling for an extensive panel of variables. We focused on lung cancer, an understudied cancer as it relates to depression symptoms despite poor prognosis and stigma that may increase depression risk. Factors that may explain elevated risk for depression symptoms among black men and white women in particular should be examined. Findings also suggest the importance of identifying depression treatment options that are appropriate and acceptable to patients. By incorporating these factors and options into depression prevention, identification, and referral practices, we may lessen lung cancer burden for a larger number of patients.

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

The author(s) indicated no potential conflicts of interest.

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This historic year, as ASCO proudly commemorates its 50th anniversary and decades of evolutionary growth, the Society also celebrates the significant progress that has been made against cancer throughout history. ASCO's anniversary website, CancerProgress.Net, chronicles these achievements and more. We invite you to visit the upgraded Cancer Progress Timeline to explore advances in 18 different cancers and several types of care, peruse stories about ASCO's evolution and progress in the field, check out the site's new social media features, and vote on the most significant milestones in the field. You can also follow ASCO on ASCO Connection, Twitter, and Facebook to join in on the conversation about progress.

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